

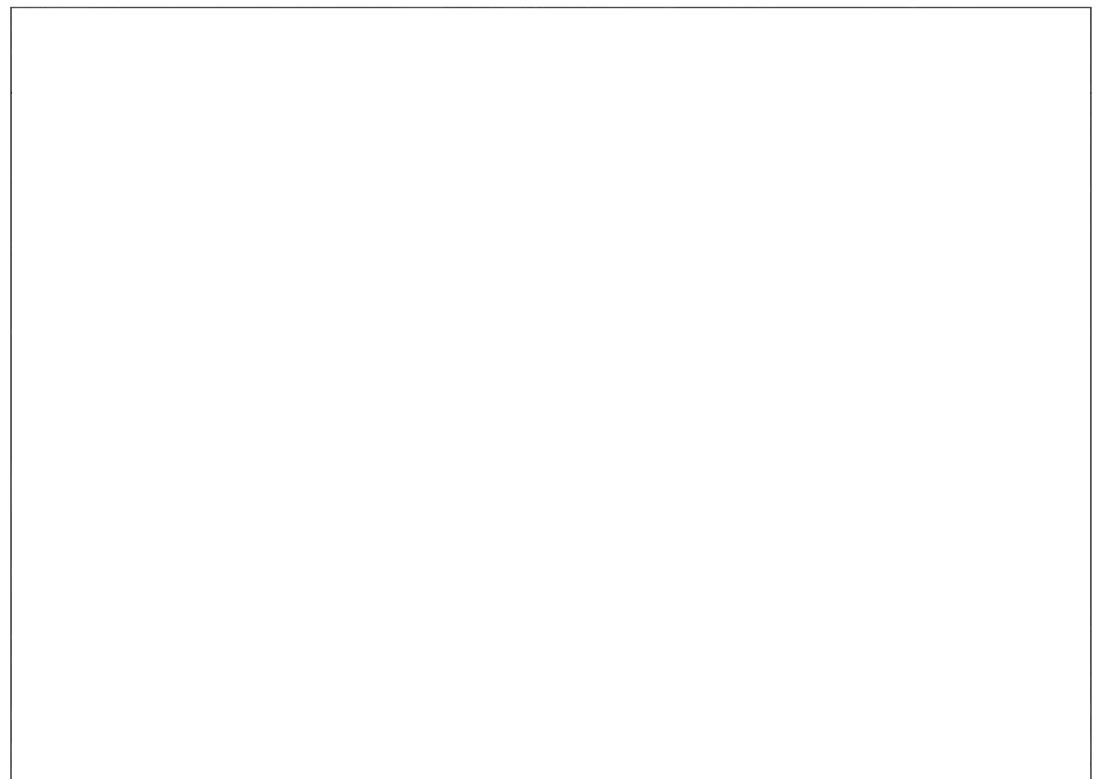


Air Force Research Laboratory|AFRL

Science and Technology for Tomorrow's Air and Space Force

Success Story

IHPTET PROGRAM DEMONSTRATOR ENGINE TESTING SUCCESSFUL



The AFRL Propulsion Directorate's Integrated High-Performance Turbine Engine Technology (IHPTET) program completed its most successful year of demonstrator engine testing. Demonstrator test engines have been highly successful in establishing technology baselines and setting precedents for further improvements. The technologies demonstrated by these engines will be transitioned to advanced aircraft engine development programs such as the Joint Strike Fighter.



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Accomplishment

Among the IHPTET demonstrator engines tested were those developed by Allison Advanced Development Company, Honeywell, Pratt & Whitney, and General Electric. Some of the demonstrated technologies included four-stage high-pressure compressor stability, high-pressure ratio core-driven fan, fan damping, rotor dynamics, and advanced compressor aerodynamics. In some cases, the tests involved the highest temperature demonstrator core engines ever run. In addition, the core engines demonstrated capability to achieve a 48% increase in thrust-to-weight ratio, a 23% reduction in production costs, and a 19% reduction in maintenance costs.

Background

The IHPTET program began in 1987 as a collaborative effort between AFRL, the Department of Defense, the National Aeronautics and Space Administration, and industry, with the primary goal of doubling propulsion system capability by 2005. The technologies developed by the program are intended to be used in the design of future manned and unmanned turbofan, turboshaft and turboprop, and expendable propulsion systems.

Propulsion
Support to the Warfighter

Additional Information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (04-PR-34)